

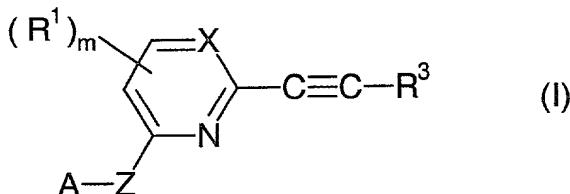
## HERBICIDAL 2-ALKYNYL-PYRIMIDINES

What is claimed is:

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1. A method of combating undesired plant growth at a locus, comprising application to the locus of an effective amount of at least one compound of formula (I)

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wherein

X represents N or CR<sup>2</sup>;

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R<sup>1</sup> each independently represent a halogen atom or an optionally substituted alkyl, alkenyl, alkynyl, alkoxy, alkoxyalkyl, alkoxyalkoxy, group or a haloalkyl, haloalkoxy, cyano, nitro or SF<sub>5</sub> group; or -S(O)<sub>p</sub>-R<sup>4</sup>, in which p is 0, 1 or 2, and R<sup>4</sup> represents an alkyl or haloalkyl group; or -NR<sup>5</sup>R<sup>6</sup>, in which R<sup>5</sup> and R<sup>6</sup> each independently represent a hydrogen atom, an alkyl, alkenyl, aralkyl or aryl group, or R<sup>7</sup>O-CY-, in which R<sup>7</sup> represents an alkyl group, and Y represents O or S;

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R<sup>2</sup> represents a hydrogen atom or has the meaning given for R<sup>1</sup>;

30

R<sup>3</sup> represents a hydrogen atom or a formyl group or an optionally substituted alkyl, alkenyl, trihydrocarbylsilyl or aryl group, or an optionally substituted 5- or 6-membered nitrogen-containing heteroaromatic group;

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A represents an optionally substituted aryl group, an optionally substituted 5- or 6-membered nitrogen-containing heteroaromatic group or an optionally substituted thienyl group;

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Z represents an oxygen or sulfur atom or a single bond;

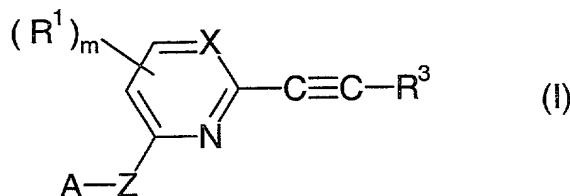
m is 0, 1 or 2;

and the agronomically acceptable salts or N-oxides thereof.

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2. A compound of formula (I)

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wherein

10 X represents N or CR<sup>2</sup>;

R<sup>1</sup> each independently represent a halogen atom or an optionally substituted alkyl, alkenyl, alkinyl, alkoxy, alkoxyalkyl, alkoxyalkoxy group or a haloalkyl, haloalkoxy, cyano, nitro or SF<sub>5</sub> group; or -S(O)<sub>p</sub>-R<sup>4</sup>, in which p is 0, 1 or 2, and R<sup>4</sup> represents an alkyl or haloalkyl group; or -NR<sup>5</sup>R<sup>6</sup>, in which R<sup>5</sup> and R<sup>6</sup> each independently represent a hydrogen atom, an alkyl, alkenyl, aralkyl or aryl group, or R<sup>7</sup>O-CY-, in which R<sup>7</sup> represents an alkyl group, and Y represents O or S;

20 R<sup>2</sup> represents a hydrogen atom or has the meaning given for R<sup>1</sup>;

25 R<sup>3</sup> represents a hydrogen atom or a formyl group or an optionally substituted alkyl, alkenyl, trihydrocarbylsilyl or aryl group, or an optionally substituted 5- or 6-membered nitrogen-containing heteroaromatic group;

30 A represents an optionally substituted aryl group, an optionally substituted 5- or 6-membered nitrogen-containing heteroaromatic group or an optionally substituted thienyl group;

Z represents an oxygen or sulfur atom or a single bond;

m is 0, 1 or 2;

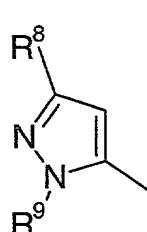
35 with the proviso, that bis-(2-ethynyl-pyrid-6-yloxy)-1,3-benzene, bis-[2-(2-trimethylsilylethynyl)-pyrid-6-yloxy]-1,3-benzene, bis-[2-(3,3-dimethyl-3-hydroxyprop-1-ynyl)-pyrid-6-yloxy]-1,3-benzene, bis-((2-ethynyl-pyrid-6-yloxy)-4-phenyl)-2,2-propane, bis-((2-ethynyl-pyrid-6-yloxy)-4-phenyl)-2,2-1,1,1,3,3,3-hexafluoropropane, and bis-((2-ethynyl-pyrid-6-yloxy)-4-phenyl)-sulfur are excluded and the agronomically acceptable salts or N-oxides thereof.

45 3. A compound as claimed in claim 2, wherein Z represents an oxygen atom.

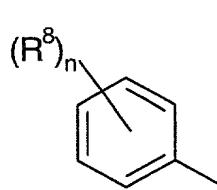
4. A compound as claimed in claim 2, wherein R<sup>3</sup> represents a phenyl group being optionally substituted by one or more halogen atoms or alkyl or haloalkyl groups.
- 5 5. A compound as claimed in claim 2, wherein R<sup>3</sup> represents a C<sub>1-6</sub> alkyl or C<sub>2-6</sub> alkenyl group being optionally substituted by one or more halogen atoms and/or C<sub>1-4</sub> alkoxy groups.
6. A compound as claimed in claim 2, wherein A represents an optionally substituted phenyl, pyridyl, thienyl or pyrazolyl group.
- 10 7. A compound as claimed in claim 6, wherein A represents a group selected from the formulae (1), (2), (3), and (4):

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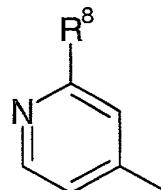
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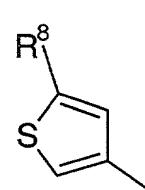
(1)



(2)



(3)



(4)

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wherein

R<sup>8</sup> each independently represents a halogen atom or an optionally substituted alkyl, alkoxy or thioalkyl group;

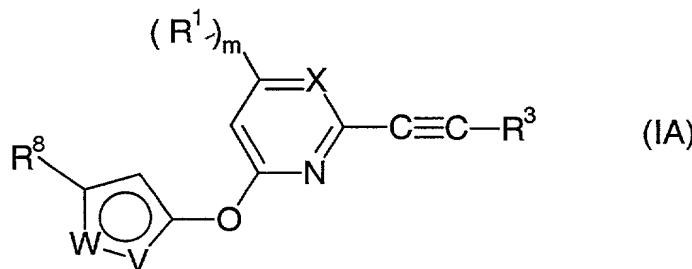
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R<sup>9</sup> represents an alkyl group; and

n represents an integer of 1 to 5.

35 8. A compound of formula IA

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wherein X, R<sup>1</sup> and R<sup>8</sup> have the meaning given in any of the preceding claims,

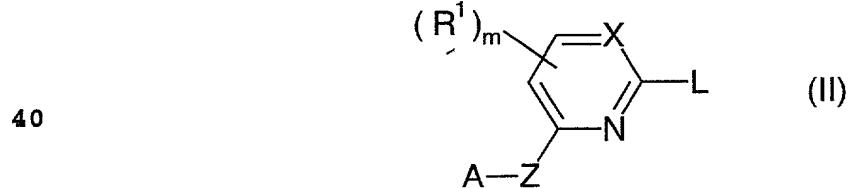
R<sup>3</sup> represents a formyl group or an alkyl, alkenyl group or an 5 optionally substituted aryl or 5- or 6- membered nitrogen-containing heteroaromatic group;

W-V represents N-CH, S-CH, N-CH-CH, CH-CH-CH or N-NR<sup>7</sup>; and

10 m is 0 or 1.

9. A compound according to any of the preceding claims selected from the group consisting of 2-(1-methyl-3-trifluoromethyl-pyrazol-5-yloxy)-4-methyl-6-(2-phenylethynyl)-pyridine; 15 4-(1-methyl-3-trifluoromethylpyrazol-5-yloxy)-6-methyl-2-(2-phenylethynyl)-pyrimidine; 2-(1-methyl-3-trifluoromethyl-pyrazol-5-yloxy)-6-(2-phenylethynyl)-pyridine; 4-methoxy-2-(1-methyl-3-trifluoromethylpyrazol-5-yloxy)-6-(2-phenylethynyl)-pyridine; 2-(1-methyl-3-trifluoromethylpyrazol-5-yloxy)-4-methyl-6-(2-trimethylsilylethynyl)-pyridine; 20 2-(1-methyl-3-trifluoromethylpyrazol-5-yloxy)-4-methyl-6-[2-(4-trifluoromethylphenyl)-ethynyl]-pyridine; 2-(1-methyl-3-trifluoromethylpyrazol-5-yloxy)-4-methyl-6-[2-(4-fluorophenyl)-ethynyl]-pyridine; 6-ethynyl-2-(1-methyl-3-trifluoromethylpyrazol-5-yloxy)-4-methyl-pyridine; 2-(1-methyl-3-trifluoromethylpyrazol-5-yloxy)-4-methyl-6-(4-methyent-1-yn-3-enyl)-pyridine; 2-(1-methyl-3-trifluoromethylpyrazol-5-yloxy)-4-methyl-6-(3,3-diethoxyprop-1-ynyl)-pyridine; 25 2-(1-methyl-3-trifluoromethylpyrazol-5-yloxy)-4-methyl-6-(2-formylethynyl)-pyridine.
- 30 10. A process for the preparation of a compound of formula I according to Claim 2, which comprises

- 35 (a) reacting a respective compound of formula II,



45 in which R<sup>1</sup>, A, X, Z and m have the meaning given and L represents a suitable leaving group, with a compound of general formula III,

**32**Met-C≡C-R<sup>3</sup> (III)

in which R<sup>3</sup> has the meaning given, and Met represents a hydrogen or metal atom or an alkylmetal group.

**5**

11. A herbicidal composition comprising a herbicidally effective amount of at least one compound of general formula I, as claimed in claim 1, together with a carrier.
- 10 12. A composition as claimed in claim 11, comprising at least two carriers, at least one of which is a surface-active agent.
13. Use of a compound of general formula I as described in claim 1 as a herbicide.

**15****20****25****30****35****40****45**